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THE RED CELL DISTRIBUTION WIDTH, A COMPONENT OF THE INTERMOUNTAIN MORTALITY RISK SCORES, PREDICTS BLEEDING OUTCOMES IN PERCUTANEOUS CORONARY INTERVENTION PATIENTS

Poster Contributions
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Background: The red cell distribution width (RDW) predicts mortality in CV and non-CV populations. Sex-specific Intermountain Mortality Risk Scores (IMRS) were created to predict mortality using RDW and other Complete Blood Count (CBC) and/or basic metabolic profile (BMP) components. Whether RDW or IMRS predict bleeding outcomes is unknown.

Methods: Patients undergoing PCI at Intermountain were studied (males: N=6007, females: N=2165). The primary endpoint was a composite outcome of TIMI major bleed, 30-day fatal bleed, and 30-day bleed requiring transfusion (secondary endpoints: each outcome separately). Logistic regression adjusted for age, HAS-BLED score, and medications.

Results: RDW predicted the composite outcome in males but not females (Table), primarily because it predicted bleed with transfusion (but not fatal bleed or TIMI major bleed: p>0.23). IMRS (using CBC or CBC+BMP) predicted the composite endpoint (Table), including bleed with transfusion (Table) and TIMI major bleed (OR=1.07-1.11 per +1 score, p<0.017).

Conclusion: Although RDW predicted the composite bleeding endpoint in males, IMRS was a much stronger predictor of bleeding outcomes for both males and females. IMRS is composed of inexpensive, commonly ordered, electronically-available laboratory data, which may make it useful and easily utilized to improve personalization of medical care. IMRS should be further evaluated for improving the identification of subjects at increased bleeding risk after PCI.

Table. Adjusted associations with outcomes of continuous values of RDW and IMRS (using CBC components only or components of both the CBC and BMP).

Variable	Sex	Wald Chi-square	Odds Ratio (95% CI)	p-value
Composite Outcome (TIMI major bleed, 30-day fatal bleed, and 30-day bleed requiring transfusion)				
RDW	Female	1.63	1.04 per +1% (0.98, 1.10)	0.20
	Male	11.24	1.09 per +1% (1.03, 1.14)	0.0008
IMRS (CBC only)	Female	18.55	1.11 per +1 score (1.06, 1.16)	<0.0001
	Male	44.88	1.11 per +1 score (1.08, 1.15)	<0.0001
IMRS (CBC+BMP)	Female	47.07	1.13 per +1 score (1.09, 1.17)	<0.0001
	Male	108.69	1.13 per +1 score (1.11, 1.16)	<0.0001
30-day Bleed Requiring Transfusion				
RDW	Female	8.21	1.11 per +1% (1.03, 1.19)	0.004
	Male	28.55	1.18 per +1% (1.11, 1.26)	<0.0001
IMRS (CBC only)	Female	17.88	1.14 per +1 score (1.08, 1.22)	<0.0001
	Male	18.38	1.11 per +1 score (1.06, 1.17)	<0.0001
IMRS (CBC+BMP)	Female	41.00	1.16 per +1 score (1.11, 1.21)	<0.0001
	Male	77.55	1.18 per +1 score (1.14, 1.23)	<0.0001